

## ABSTRACT

A semiconductor apparatus includes a MOS transistor having a semiconductor substrate providing as a channel region between a source and a drain. A gate electrode is formed on the semiconductor substrate via a gate oxide film. A threshold voltage of the source side region of the MOS transistor is higher than that of the drain side region in a longitudinal direction of the channel region so that a saturation drain current can be constant and a  $\lambda$  performance can be improved while suppressing channel width and length.